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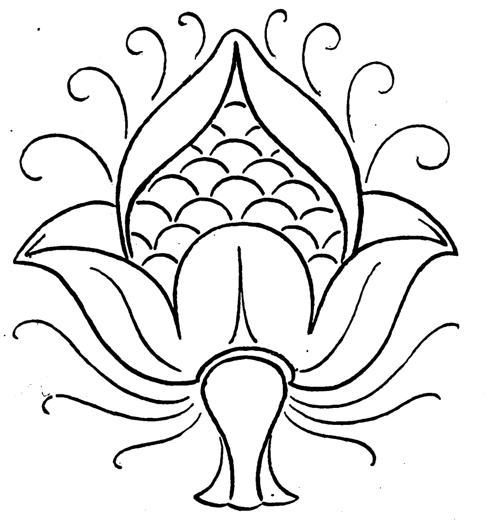
REPOUSSÉ METAL WORK.

III.—TOOLS AND APPLIANCES.

Two appliances are indispensable in repoussé, the first being the cement or pitch block (a bowl is sometimes used for the purpose), to which the metal to be operated upon must be attached. Unless the metal has a backing of some kind it will be almost impossible to impart shape to it, and unless this backing is of a proper kind the worker will be limited to the production of ornamentation but little better in appearance than a series of bruises. It will be seen at once that the backing must be of some plastic material that may at the same time yield where required and yet remain firm at all other points. To this end both wood and lead have been tried, but as these substances neither have the requisite elasticity, nor will they adhere to the entire surface of the brass or copper (without which little shaping or modelling can be done), they are of no use for the purpose of true repoussé. The only material that will answer all needed requirements—viz.: solidity, elasticity, adhesiveness and facility of application and removal, will be found to be a compound of ordinary pitch. There are several mixtures of this in use among professional workmen, and of these the following will be found to answer every purpose: Soft pitch, 7 lbs.; black resin, 4 lbs.; tallow, 6 oz.; bath brick, powdered, 6 lbs. A commoner mixture for filling bowls or vases is: Pitch, 3½ lbs.; resin, 2 lbs.; tallow, half a pound; white sand heated and then to be stirred in, 9 lbs. These are to be melted together over a slow fire in an iron saucepan or pitch kettle. The addition of more or less tallow will make the mixture harder or softer, as may be required. It is a good plan to make it of two degrees of hardness, a hard mixture (using very little tallow) for outlining and finishing upon, and a softer one (using a larger quantity of tallow) for the raising process. The mixture used for outlining should be sufficiently hard to prevent the metal, while it is being worked upon, from turning up at the edges, and yet tenacious enough to hold it until the design is outlined. Should the amateur prefer to get his cement ready made, either in lumps for melting up or already made into pitch blocks, there should be no difficulty in his doing so.

Having procured the cement, it should be melted in an iron saucepan over a slow fire, and when thoroughly fused poured upon a block of hard wood, or flat stone, about three inches thick, around which a stout piece of card, or brown paper, has been fastened by tacks, string or glue to the depth of about an inch or an inch and a half, so as to form an edging to prevent the cement running down the sides. When the cement is quite cold the edging is to be removed. This forms the pitch or cement block on which the repoussé is to be done. A block about twelve inches square will be quite large enough, it being extremely difficult to keep a larger surface of metal properly attached, owing to its expansion under the process of repoussé. When large pieces of work have to be done (though it should be arranged, as far as possible, to do such work in small portions, to be afterward fitted together), they must be worked in parts, the metal being shifted on the block until the whole is completed. A block about 12 inches by 9 inches, if 1 inch thick, will require some 8 or 9 lbs. of cement. The other indispensable requisite is a cushion on which the block is to be laid when in use. This should be made of canvas, or other material of close texture, filled with sifted river sand, and should be about an inch and a half thick and rather larger than the block. The cushion should not be quite filled—three quarters will be sufficient. It has sometimes been objected that the noise of repoussé work is prohibitive, but were this simple appliance used there would be little ground for the complaint, besides which the work will be of better quality when it is used, owing to the consequent freedom from vibration, than when it is discarded. To these appliances may be added Garratt and Fowler's spirit blow lamp, for softening the cement and attaching the metal to the block, and other similar purposes—a most convenient and useful little invention, which will save much time and trouble; a smoothing-iron or spatula for levelling the cement block; a strong pair of steel shears; a pair of flat and another of round-nosed pliers; a steel drawing or etching point; a smooth file or two; a saw frame and saws for metal, and a drill. It is by no means necessary to have all these articles, however, unless the worker intends to complete his work and make it up himself into the various articles for which brass is used, in which case, indeed, he will almost need a small brass finisher's workshop. With regard to the work-table, it may be as well to say a word or two. It should be strong and substantial. A thin, spindle-legged table, that will shake and vibrate at every stroke of the hammer, should never be used, nor one with drawers in it, as these greatly increase the noise. A pupil of the writer's had a special table made, the top of which, though perfectly supported, was so constructed as to revolve, and thereby render the handling of the work exceedingly convenient; and to those who can afford so great a luxury we recommend the idea. The chair or stool—for the worker should always sit at his work—should be of such a height that the work, when attached to the cement block and placed in position on the sand-bag, shall be level with the middle of the chest. The position chosen for working should be directly facing a window, or having the right shoulder slightly turned toward the window. Of course a left-handed workman must reverse these positions.

Now to proceed to work: Cut off a piece of metal, flatten and soften it as directed. Now scour it thoroughly with coarse (F) emery cloth and oil (colza or lubricating); then with a finer (O) cloth rub the metal in a circular direction until there appears a fine graining all over the surface, after which wipe off the oil and grit with a rag on which a little turpentine has been poured. The surface thus obtained will not only be better than that obtained by buffing, sanding or other such method, but will also be free from unpleasant glaze, and the pattern, when scratched on, will consequently be more clearly visible—a matter of no little importance in fine or elaborate work. The metal is now ready for attaching to the cement block. To do this, proceed as follows: Light the blow-lamp, the cotton of which must have been previously soaked with methylated spirit (but not so fully charged as to run over), and gently warm the surface of the cement by blowing the flame upon it, taking care to avoid burning it; this will cause the surface to become level, should there be any slight unevenness. It is at all times absolutely necessary to have a perfectly even surface when laying down the metal, and if the cement block be very uneven, the cement should be thoroughly softened (not melted) and the block then laid, cemented side downward, on a flat stone that has been damped, and left there with a weight upon it for half an hour or so. Next the metal must be made hot, rather more so than can be comfortably held in the hand, and then, while both it and the cement are warm, laid, papered side uppermost, on the cement. Press the metal firmly all over with a cloth, to avoid burning the fingers, until every part of it is in close contact with the cement. If this is done carefully, and at the proper temperature, the air will be completely excluded and the metal will be firmly attached to the cement. A little practice and judgment will soon enable the learner to master this very important particular. Both metal and cement must now be allowed to cool for a while, so as to permit of the transferring of the design. Of course a beginner must select a very simple pattern, by which is meant one in lines of very easy curves, such as that represented in the illustration above. Or perhaps it would be even better for him to attempt a few slightly curved lines, advancing to straight ones, until a little mastery of the tracer has been gained. It may be here remarked that there are many things represented in a design by lines or dots that must on no account be thus rendered on the metal. To give an appearance of relief to his flat drawing the designer shades it up with lines or dots, but the production of the design in relief at once does away with the necessity for these, and to introduce them in the relief takes away their meaning and only gives the idea that the design is, from some unaccountable cause, slashed with cuts or spotted in certain parts with a number of dots. Some lines, too, merely indicate the form, and others, instead of being incised, should be in relief. The worker, therefore, must be careful to avoid reproducing anything that is unnecessary, the bare outline being generally all that is needed, all other lines being added at the last stage, when it will be less difficult to distinguish between those which are and those which are not required. W. E. G. Gawthorp.



EASY CURVES FOR FIRST OUTLINING.

China Painting.

LESSONS BY A PRACTICAL DECORATOR.

VI.—BURNISHERS, BRUSHES AND WHEELS.

Gold, when it comes from the kiln, resembles a dull yellow paint more than the precious metal it is; but under proper treatment it soon presents a brilliant surface, provided it is a rich gold. If a gold which is cheap and half alloy be used, after firing it will look almost like copper, and unless two coats were applied will, in some places, be hardly more than a wash and very difficult to burnish—in fact, requiring to be refired.

If the gold is not fired enough it will rub off under the burnisher. If fired too hard it will, in a measure, be glazed, and will not respond to the touch of the tool. As I said in my last article, gold is not difficult to fire, and it requires the same heat that develops the carmines.

The best burnishers are made of bloodstone. These are used almost exclusively by practical workmen. They are expensive, ranging in price from one dollar and fifty cents to six dollars each. If they are offered at cheaper rates it is because they are worn out and cast aside by decorators who have found them useless. Agate burnishers are really better for amateurs, being less liable to scratch or discolor the china or decoration. They also have the advantage of being very much cheaper. It is not necessary to have a great variety of burnishers for ordinary work. Two—No. 14 and No. 13—will answer very well. They cost from fifty to seventy-five cents each. In selecting burnishers try to have them as free from imperfections as possible. In order to have a burnisher work well it must be kept perfectly clean and smooth. For this purpose a piece of sole leather is useful. It can be obtained at either a leather store or a store where shoes are mended. A piece four or five inches long and two and a half or even three inches wide will be necessary. Rub the leather two or three times over with moist whiting to take out the tannin. After the whiting is dry rub as much of it off as possible. Then rub on as much burnisher's putty as will go on the end of a small table knife, and the leather is ready for use.

If the burnisher's putty cannot be found at any of the stores where burnishers are sold, write to some of the houses advertising in The Art Amateur, as Sartorius, Weber & Co., or Marsching. The burnishers should be thoroughly rubbed on this piece of leather before using. It is a good plan to move the tool up and down in one place, forming a groove, turning it over and over, so that every part of it shall come in contact with the leather. Be sure and wipe it off with a soft cloth afterward, for if any of the putty adheres to it it will be transferred to the china. The putty should not be put on the leather every time it is used. Once in two or three weeks will do, and then only a very little should be used.

Care should be taken not to handle the gold any more than is necessary before burnishing, for there is more or less grease on the fingers which will soil it and make it more difficult to burnish. Hold the article to be burnished in the left hand, using a soft cloth. Have in a saucer or small dish some whiting that has been sifted through a muslin cloth and moistened with water. It is very necessary that the whiting should be sifted, there are so many coarse particles that would scratch the gold. Wet the whiting so as to form a thick paste each time it is used. Hold the article in the left hand, then firmly but lightly rub the burnisher on the gold. If a plain surface, move the burnisher back and forth in the *same direction*, or it will have an uneven, scratched look. Do not leave any unburnished lines between, or they will always show. After going over the surface rub it with whiting, using a soft linen cloth. Wipe the gold off carefully when dry, and then go over it with the burnisher again. The result will be a bright, perfectly polished band.

If the gold is in the form of a design, follow out the figures. A solid centre of a saucer should be burnished very carefully in one direction; then the whiting should be applied, and after it is wiped off very carefully, the gold burnished in the opposite direction. This will give it a very finished look. Then rub very gently with a glass brush back and forth.

BURNISHERS should be very closely watched. If the slightest roughness appears on an instrument do not use it again until it has been reground, or it will scratch the gold and probably peel it off. Often when this happens the gold or the firing is blamed. They can be ground at any machine shop where fine tools are ground—an optician's is best. If, in using it, a burnisher feels rough and begins to scratch, stop at once and rub the tool on the leather, or a bad scratch will be the result. One can feel the roughness as one works almost better than one can see it. It is a good plan to stop every few moments and rub the burnisher, and so avoid this trouble. Great care should be taken, especially by a beginner, not to rub the burnisher beyond the gold on to the white china, for it will mar the glaze and always show. If the china has a raised decoration, and gold is clouded to cover it, it should be quite a heavy body to give it a rich look. It will add very much to the effect to burnish some of the raised parts and then rub the other with the glass brush. Very pretty work can be done with the burnisher. If there are two straight lines, make one bright and on the other make sharp strokes across the line, looking like little bows. Solid gold flowers can have the outside edge burnished and the centre dull. Do not burnish a line around the flowers, but burnish each petal in quite delicate strokes towards the centre. It is a very good plan to examine the finish of gold work as seen on imported work. Sometimes there is quite a variety, which adds very much to the beauty of the article.

The dull matt gold so much admired and so often seen on imported wares is obtained by the use of the glass brush. These brushes come in three different sizes. The medium size will answer for all ordinary work, such as handles, backgrounds or outlines. These brushes are made of innumerable strands of spun glass, which are very brittle and fly in all directions, entering the flesh like so many needle-points, penetrating the clothes and skin if not protected, and being so very fine they are difficult to remove. A piece will sometimes remain in the finger for days, causing a very unpleasant sensation. I always use a pair of rubber gloves and find them a great safeguard—much better than kid.

Take a large paper box lid and rub the articles over it. The brush wears off rapidly, and a large amount of refuse soon collects, which will fall into the cover. It is a good plan to have a soft hair brush to clean the article off with, especially if it is to be refired, for if any particles of the glass are left on they will run like so much glaze, and spoil everything they touch. It is better to rub in one direction, as with the burnisher. A more even finish is thus obtained.

A very good way to finish a cup is to burnish the edge bright and rub the handle with the brush, giving it a dull finish. A large surface can be finished more evenly with the brush than with the burnisher. It is very effective to unite the two in finishing a border. Gold will not burnish with as great brilliancy after it has been rubbed with the glass brush. It should be burnished first.

All edges of cups and saucers, plates, and the like, that have gold clouded on should be finished with the brush. The glass brush is wound round the middle with a cord. The end will soon wear down to this, and it can then be unwound and tied lower down. The brush can be used on both ends until only an inch remains.

Outlines done in raised work are generally burnished. Great care should be taken not to rub the gold off from the paste. The burnisher should be used very gently.

BRONZES, when burnished, become almost as bright as gold, which is not desirable, except in flat bronze leaves. The veins and outlines are usually made brighter. The glass brush gives them a soft, metallic finish. In rubbing them a little of the coloring material rubs off, but it does not harm them. The bronzes will not stand as much rubbing as gold. It makes them too brilliant.

SILVER is better finished in this way, but this, too, must not be polished as much as gold, for it is soft and will come off on the brush—the china will show through before one realizes that it has been touched.

PLATINUM can be finished either way, according to the taste of the decorator.

Sometimes, when too much fat oil has been used, the gold will fire in little scales, which will peel off and leave the china perfectly free. Of course there is only one remedy, and that is to do the work over again. The first thing is to remove the roughness of the gold. Take a piece of 00 emery paper, which can be found at any hardware store; cut off a piece about an inch long, cut that in two pieces and rub them together till the surface is a little worn down or they will take the gold all off; then gently rub the gold until all the rough places are smooth; then regild. If these directions are not followed out every imperfection will show through, and spoil the appearance of the article when refired.

In regilding, if the decoration looks weak in any place it should be touched up lightly, for a second firing will not give it strength by any means; it will only make it still weaker.

THE WHEEL is quite an important item of a china decorator's outfit, especially if one does one's own firing. There are a number of wheels in the market. The self centring ones are preferable to all others; they enable the artist to do the most rapid and satisfactory work. These wheels can be made perfectly stationary, so as to be used as an easel. This is a great advantage. Where a large article has been tinted and it is necessary to put on the decoration, gilding, etc., and have it all done in one firing, it is almost impossible to handle the piece without marring; but on the wheel it can be painted with the greatest ease, the disk of the wheel turning so as to enable the decorator to reach every part without trouble, at the same time that the left hand is relieved from the fatigue of holding the article. In painting a plaque or large dish of any kind, the wheel can be turned in any direction, while the hand using the brush is supported on the arm rest, which is so arranged that it can be placed in any position that the work may require.

For banding a wheel is absolutely necessary, when good work is required. Of course if a person is going to do only a limited number of articles it is cheaper to have the edges put on by a professional decorator.

On inquiring the price of a wheel, which will cost from fifteen to twenty-two dollars, the artist is very apt to exclaim: "It is too expensive, I cannot afford it!" but when he comes to count the number of articles he has banded he will soon be convinced that a wheel would pay for itself before long, to say nothing of its other uses. In some places where there are china painting clubs that meet regularly once or twice a week, if each one paid his proportion of the price it would not be so serious a matter; or where two or three ladies band together and buy a kiln, why not follow the same plan and purchase a wheel? Wheels are very simple in construction, and one can very soon learn to use them.[*]

The article to be banded should be placed in the middle of the disk. A screw at one side when turned will move three jaws, which grasp the article firmly and hold it in place. The arm-rests can be made the proper height and length by means of a screw, and the piece is then ready to receive a band on the edge, or a fine line in the centre.

Special brushes are needed for this style of work. They are called cut liners. They are used not only for edges, but for all lines, no matter how narrow. They slant across the end instead of being straight or pointed. The object of this is that when they are thoroughly filled with paint or gold, the point which alone touches the china is fed by the shorter hairs, and so one can go round the dish without refilling the brush. In putting on a line with color, no matter how much care might be taken the freshly filled brush would make the line darker. In using gold it would not make so much difference, though it is rather difficult to put the brush on and have it in exactly the same position, so that the line would join perfectly. Of course it takes time, practice and plenty of patience; but perfection can be attained in the end if these three are combined.

These wheels can be placed on a table. Generally one requires a rather higher seat than for ordinary painting.

In purchasing a wheel one should obtain a circular containing instructions. M. B. ALLING.

TINTS APPLIED BY "DUSTING."

THE preferred way to apply a tint in matt color, when mechanical excellence of effect is desired, is by the process known as "dusting the color on." This process is not easy when its rules are imperfectly understood, but the work is in reality simple and the result sure.

A bottle of prepared "grounding oil" should be procured from some first-class dealer and applied to the china surface (first carefully cleaned with turpentine) with a large grounding brush, such as is commonly used for laying a tint. "Deerfoot blenders" or wads of raw cotton loosely enclosed in small squares of "Florence silk," which has been softened by washing and carefully dried, should be at hand to complete the work—the combination of both is better for the work than the use of either alone.

With rapid strokes of the grounding brush cover the surface you wish to tint with the oil; then immediately apply the cotton wad, which must not be a *hard* one, in the same manner as when "pouncing" a tint in the ordinary glaze colors. This process must be patiently continued until every particle of the china surface has received its quota of oil and until the whole has become "tacky" to the touch, and has reached such a stage of dryness that a perfectly fresh wad of cotton will absorb no oil as it is passed over the surface; for as long as a wad will absorb the oil the surface is unprepared for proper reception of the color to be applied. The use and examination of fresh wads form therefore the best test of this work.

As soon as this stage of the work appears to be perfect, the dry powder color should be quickly applied, lest the prepared surface should in places become hard, and thus cause an uneven tint.

The powdered color, if at all gritty in the vial, should be ground on a glass slab with a muller until it becomes fine, and should be at hand for use in a plate or bowl. Now, take in the right hand a small wad of the raw cotton with no covering whatever, dip it into the powdered color, and with it rub the color lightly upon the prepared oiled surface of the china; if all is right, the color will adhere easily and with perfect uniformity, but if for any reason the oil has dried unevenly upon the china, it will cause blotches in the tint, and if the work has been careless and the oil not properly spread by the wad or blender the color will not adhere in those places; for either blunder there is small remedy—it is best in such a case to do the work over.

The powdered color need not necessarily be applied with the cotton wad. It is sometimes *thrown* upon the oiled surface. However it be applied, the superfluous particles of powder may be blown or *very lightly* brushed from the surface, and the tint is now ready for the kiln. If it must be moved from one place to another before firing, the best protection for this easily injured tint is to give it a hard drying in some kind of an oven. Even if it is scorched to brownness no harm will be done.

Tints in *all powder colors* may be applied in this way, if desired, either upon the surface of glass or of china. If the grounding oil is in proper condition, the work should present little difficulty; if the oil has become a little thick, the Deerfoot blender will be found more serviceable than the silk pad. The oil when grown too thick may be cautiously thinned by the addition of a little turpentine. A unique and beautiful decoration for lamp vase was recently executed by tinting the lower half of the vase in olive green and the upper half in carnation No. 1—La Croix colors, lightly applied—and padding this tint to tackiness, then covering it with a film of matt white brushed on as thickly as possible. The tint being fired gave a finely shaded background for a design of begonia leaves.

The leaves were veined and fringed with gold, and the embossed band at the top of the vase was finished with a heavy clouding of silver partly overlaid with gold.

F. A. HALL.

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[*] Mr. Alling generously offers to send free of charge one of his best wheels (retail price, $22.00) to the person who forwards to the publisher of The Art Amateur (before Jan. 1, 1891) the largest subscription list of persons interested in china painting. Those who wish to compete for this prize should write at once for our "Club Circular" which gives full information how to proceed to get up a club. The usual liberal discounts and premiums of artists' materials will be allowed *in addition to this prize*, so that even those who send only one subscription in addition to their own will be repaid for their trouble, while those who send larger clubs will be benefited proportionately.